

Architecture of Grammar, day 4

DGfS Summerschool 2024 University of Göttingen

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DGfS Summerschool 2024, University of Göttingen, Aug. 12-16, 2024



Meaning First View Movement

Goal:

- representational: generate two (or more) independent phrases
- semantic binding as with e.g. pronouns
- semantic incompatibility blocks semantic binding
- spell-out determines linear order and pronunciation

Structure of argument:

- 1 arguments that movement semantics relates two non-identical DPs
- 2 show that spell-out algorithm can be stated

Fox (2017) – argument 1 for double interpretation

Extraposition blocks *de re* of noun:

- (1) a. John saw an alleged mouse from Mars yesterday.
- b. # John saw an alleged mouse yesterday from Mars.
 entailments: there is an alleged mouse x ,
 that alleged mouse is alleged to be from Mars

But *de dicto* of noun available:

- (2) John saw an alleged alien yesterday from Mars.
 entailments: there is an alleged alien x ,
 that alleged alien is alleged to be from Mars

More evidence for double interpretation

- (20) a. I'll [[explain [a paper that was recommended by a linguist] when we meet] who teaches at UCLA].
b. *I'll [[explain [a paper that wasn't recommended by any linguist] when we meet] who teaches at UCLA].

(20)' **LF representations for (20) (by local QR + embedded LM)**

- a. [A paper that was recommended by a linguist who teaches at UCLA].
I'll explain [a paper that was recommended by a linguist]
b. [A paper that wasn't recommended by anyone who teaches at UCLA]
I'll explain [a paper that wasn't recommended by anyone]

(20a)" **Interpretation of (20a)' (by Trace Conversion)**

$$\begin{aligned} & \llbracket \text{A paper that was recommended by a linguist who teaches at UCLA} \rrbracket \\ & (\lambda x \llbracket \text{I'll explain [the}_1 \text{ paper that was recommended by a linguist}] \rrbracket^{1 \rightarrow x}) \\ = & \llbracket \text{A paper that was recommended by a linguist who teaches at UCLA} \rrbracket \\ & (\lambda x: x \text{ is a paper that was recommended by a linguist. I'll explain } x) \end{aligned}$$

(20b)" **Interpretation of (20)'b (by Trace Conversion)**

$$\begin{aligned} & \llbracket \text{A paper that wasn't recommended by anyone who teaches at UCLA} \rrbracket \\ & (\lambda x \llbracket \text{I'll explain [the}_1 \text{ paper that wasn't recommended by anyone}] \rrbracket^{1 \rightarrow x}) \\ = & \llbracket \text{A paper that wasn't recommended by anyone who teaches at UCLA} \rrbracket \\ & (\lambda x: x \text{ is a paper that wasn't recommended by anyone. I'll explain } x) \end{aligned}$$

Supporting child language evidence

Guasti et al. (2023): Children sometimes overpronounce / undercompress material adults leave silent.

- (3)
 - a. silent antonym markers (Sauerland et al. 2024)
 - b. silent negation with negative indefinites (Nicolae & Yatsushiro 2022, Driemel et al. 2023)
 - c. light null verbs in decomposition (Martin et al. 2022)

Pronounced traces: resumptive noun phrases in children's relative clauses (Ferreira et al. 1976, Labelle 1990 and others):

- (4) el gato empuja al perro que el conejo lava al perro
the cat pushes the dog that the rabbit washes the dog
- (5) Ich möchte das Mädchen sein, das der Opa das Mädchen umarmt.
I want the girl be who the granddad the girl hugs
I want to be the girl who the granddad hugs. (Yatsushiro & Sauerland 2018)

Pronunciation: Some critical examples

LF to PF mapping in a late adjunction example:

- (6) $\left[\lambda_x \text{ I looked for } \boxed{\text{the}_x [\sqrt{\text{PICTURE}} \cap \text{N}]} \text{ very intensely } \right]$
 $\boxed{\exists [\sqrt{\text{PICTURE}} \cap \text{N} \cap \text{by this artist}]}$

I looked for $\boxed{\text{a picture}}$ *very intensely* $\boxed{\text{by this artist}}$.

Pronouns arise in Ruys (1992) QR-out-of-conjunction example:

- (7) $\lambda_x \left[\text{a student likes } \boxed{\text{the}_x \text{ professor} \cap \text{N}} \text{ and wants } \boxed{\text{the}_x \text{ professor}} \right.$
 $\left. \text{to be on his committee } \right] \boxed{\forall [\text{professor} \cap \text{N}]}$

$\boxed{\emptyset}$ *A student likes* $\boxed{\text{every professor}_i}$ *and wants* $\boxed{\text{her}_i}$ *to be on his committee.*

A movement

Sauerland (1998), Takahashi & Hulsey (2007): traces of A-movement contain no or almost no restrictor.

(8) $\boxed{\text{A relative of Mary}_i\text{'s}}$ seems to her_{*i*} $\boxed{\emptyset}$ to be in trouble.

$\boxed{\exists [\text{N} \cap \sqrt{\text{RELATIVE}} \text{ of Mary's}]}$ λ_x seems to her to $\boxed{\text{the}_x \text{N}}$ [to be in trouble.]

Total reconstruction for scope:

(9) *A woman is likely to win this ultramarathon.*

$\boxed{\emptyset}$ is likely to $\boxed{\exists [\text{N} \cap \sqrt{\text{WOMAN}}]}$ [to win]

Basic ideas for English

- 1 (full) chain: All coindexed NPs (i.e. chain links) in a sentence
- 2 argument position: All positions where the sister of the NP is a predicate
- 3 EPP position: Spec(TP) position of finite verbs, raising-to-object position of ECM verbs
- 4 wh-position: Highest position in the left periphery of a question
- 5 subchain: Section of a chain containing one argument position and all c-commanding co-indexed chain links except those c-commanding also higher argument positions.

EPP positions

There expletives: If a chain link is in an EPP position doesn't contain a $\sqrt{\text{ROOT}}$, pronounce it as *there* with the right agreement.

(10) *I expect there to be coffee left.*

(11) *You can drink the coffee I expect there to be left.*

Total reconstruction: If an EPP position is empty, copy the next lower NP and pronounce it in the EPP position unless it is already pronounced in a wh-position.

(12) *A woman is likely to win this ultra-marathon.* (likely \gg a woman)

(13) *How many women are likely to win this ultra-marathon.* (likely \gg many women)


Wh-positions

Multiple wh: Pronounce the highest wh-phrase in the left periphery of a question.

(14) *Who ~~what~~ Q ~~who~~ ordered what?*

Partial reconstruction: Pronounce also predicates in the highest wh-position that only occur in lower chain links.

(15) *Which article about her did no celebrity read?*

(16) *which article Q did no celebrity read [article about her]*


Maybe extraposed material is exempt from the requirement to be pronounced at the top:

(17) *Which picture did you look for very intensely by this artist.*

QR-positions and pronouns

Undo QR as much as possible: Pronounce quantifiers with the right quantificational force in the EPP or else argument position of that subchain such that they are leftmost.

- (18) *A student likes every professor and wants her to be on his committee.* (every professor \gg a student)

If PP or relative clause modifiers only occur in higher positions, pronounce them there.

- (19) *I looked for a picture very intensely by this artist.*

Pronouns and elsewhere

Pronouns: If material has not been pronounced in a subchain, but it overlaps with one where it has been pronounced, use a pronoun.

(20) Which student ~~student~~ called her[~~student~~] father?



(21) ~~every-prof~~ A student likes every prof and wants her to ...



Strong crossover: The pronoun will be part of the chain and be the trace in (23).

(22) *Which girl did she say [t would win]?

(23) Which girl t said she would win?

Weak crossover: As in QR, a preference for (25) with pied-piping seems to apply.

(24) ?? Which girl did her mother say t would win?

(25) Which girl's mother said she would win?

Elsewhere: Pronounce material still not pronounced in its subchain in an EPP position or else its argument position.

Locality

Movement binding dependencies: sensitive to island phenomena and require intermediate chain links:

(26) Who did John read a book that wrote?

(27) me e gble be wò for t ?

Who you say that he[+wh] hit t

Who did you say that -- he hit t ? (ewe, Collins 1993, p. 188)



Pronoun binding dependencies: not sensitive to islands, don't allow intermediate chain links

(28) *Who is such that John read a book that she wrote?*

(29) *(Who is such that you said that he[-wh] hit her?)*

Difference not captured so far.

Intuition: Movement dependencies rely only on semantic compatibility.

Minimality

Binding by the closest compatible NP:

(30) **A man₁ seems a woman to push t₁.*

intended: A man is such that it seems a woman pushes him.

(31) $[N \cap \sqrt{\text{MAN}}]$ seems $[N \cap \sqrt{\text{WOMAN}}]$ to push $[N]$

Minimization: A proposition is true only of states/models that involve the minimum possible number of entities, i.e. one for the following:

$[N \cap \sqrt{\text{WOMAN}}]$ to push $[N]$

In general though minimization makes too strict predictions.

Contrast Blocking Bound Interpretations

(32) An ox pulled a yak.

Minimization of the following would require a yak-ox pulling itself.

(33) $[N \cap \sqrt{OX}] \text{ pull } [N \cap \sqrt{YAK}]$


Assume: contrast of the two nouns (e.g. exhaustification) adds inferences that block reflexivization.

(34) $[N \cap \sqrt{OX} \cap \neg \Box \sqrt{YAK}] \text{ pull } [N \cap \sqrt{YAK} \cap \neg \Box \sqrt{OX}]$

Contrast Restricted to Domains

Movement dependencies crossing another nominal require an chain link near the nominal crossed (e.g. van Urk 2018, Keine & Zeijlstra 2024), Dinka:

- (35) Yeyínà yé ké tâak, cí Bôl ké tîŋ
who.PL HAB.2SG PL think PFV.OV Bol.GEN PL see
Who all do you think Bol saw.

- (36)  Yeyínà yé ké tâak, cí Bôl ké tîŋ

Note: The matrix subject needs to be contrasted with the trace *ké* to not bind it.

Proposal: Contrast requires two noun phrase be in a constituent at the intermediate position:

- (37) $[\exists[N \cap 2ND \cap SG] \cap \exists[N \cap PERSON \cap \neg \Box(2ND) \cap \neg \Box(SG)]]$

Effability & Economy

Can any conceptual representation that can be articulated in one language also articulated in another if the basic concepts are expressible in both languages?

Counterexample:

- (38) a. Der wievielte Tag des Monats ist heute? (GERMAN)
 the how-many-th Tag des Monats is today
 b. *The how manyth day of the month is (it) today?
 c. Which day of the month is today?

But semantic and syntactic conditions exhibit more flexibility.

Superiority

Pesetsky (1987):

- (39) a. Who invited who?
b. *Who did who invite?

- (40) a. Which girl invited which boy?
b. Which boy did which girl invite?

Explanation (Sauerland 2018): Different meanings with multiple *which* because of number marking.

(24)	a.	Abe Ben Cid	b.	Abe Ben Cid	c.	Abe Ben Cid
	Ann	*	Ann		Ann	*
	Bea	*	Bea	* *	Bea	* *
	Cel	*	Cel	*	Cel	